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A Study of the Relationship Between School Climate and Student Performance on the Virginia Standards Of Learning Tests in Elementary Schools

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

by

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Abstract

A STUDY OF THE RELATIONSHIP BETWEEN SCHOOL CLIMATE AND STUDENT PERFORMANCE ON THE VIRGINIA STANDARDS OF LEARNING TESTS IN ELEMENTARY SCHOOLS

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Educators are examining many aspects of schools as they find ways to help students improve their performance on standardized tests in order to meet both federal and state standards. This study examined the relationship between organizational climate and student achievement on the Virginia Standards of Learning tests. A total of 1,061 teachers in 47 schools across the Commonwealth of Virginia responded to the climate survey. The survey instrument was the Organizational Health Inventory for Elementary Schools (OHI-E). This brief survey instrument examined five aspects of school climate. They were Teacher Affiliation, Collegial Leadership, Resource Influence, Institutional

Integrity, and Academic Emphasis. Third and fifth grade Virginia Standards of Learning (SOL) tests were the measure of student achievement in English, mathematics, science, and social studies. This study also examined the effects of socioeconomic status as measured by the percentage of students receiving free and reduced price lunches.

There was a significant positive relationship between overall school climate and third grade performance on the mathematics SOL test and fifth grade performance on the social studies SOL test. Socioeconomic status was significantly negatively correlated with SOL scores in third grade math, science, and social studies and all fifth grade tests except mathematics.

Further regression analyses of the aspects of climate measured by the OHI-E (Institutional Integrity, Collegial Leadership, Resource Influence, Teacher Affiliation, and Academic Emphasis) indicated that Academic Emphasis had a significant independent effect on third grade English and mathematics SOL scores as well as fifth grade English, science, and social studies SOL scores. There was a negative correlation between Institutional Integrity and English SOL scores in both the third and fifth grade. This negative correlation shows that when teachers perceive that the school is vulnerable to outside interference, English scores tend to be higher.

Chapter One

Introduction

Accountability as measured by performance on standardized tests became a reality for educators with the passage of the No Child Left Behind Act (PL 107-110) in 2002. This sweeping legislation was the culmination of almost two decades of reform efforts. The publication of the report *A Nation at Risk* in 1983 is seen by many as the beginning of this push towards higher standards and greater accountability in American education. The movement gained momentum in the late 1980s and early 1990's. Since that time, several national initiatives have been implemented. In 1989, then President George H. W. Bush met with the nation's governors and set six national education goals. Included in these goals was the pledge that by the year 2000 American students would leave grades 4, 8, and 12 demonstrating competency in challenging subject matter in mathematics, science, English, and social studies (Baker, 1994). The National Council on Education Standards and Testing was established in 1991. In 1992, this council recommended the creation of a voluntary system of assessment by states to measure progress toward the national goals.

In 1994, Congress passed Goals 2000: Educate America Act (1994). This legislation abandoned the possibility of national testing. The Act, instead, created the Education Standards Improvement Council to oversee and approve standards and assessment set by the states. Funds were made available to states for the development of

their standards and assessments. In 1999, these standards were approved for such high stakes uses as graduation and promotion decisions in the future. In 1996, an amendment to the Goals 2000: Educate America Act effectively did away with the National Education Standards and Improvement Council, by repealing the stipulation that it review and certify state standards. Instead, states were required to provide assurances that standards met federal criteria for funding (Wraga, 1999). Goals 2000 went beyond the target date with the goals unmet.

The latest and most sweeping change in educational policy at the national level is the No Child Left Behind Act (P.L. 107-110) passed in 2002. The No Child Left Behind Act (NCLB) placed a high emphasis on state standards and assessments. Since the passage of NCLB, schools have become more accountable for student achievement. Schools are expected to demonstrate that the educational needs of every student are being met. One way in which educational achievement can be documented is through demonstrated improvement on state standardized tests (Office of the Under Secretary, 2002). Educators have long argued that many factors influencing student achievement are outside the control of the schools. Links have been established between student achievement and such factors as socioeconomic status or the educational level of parents (Bulach, Malone, & Castleman, 1995). Although these factors are outside the control of public schools, others are not.

A focused curriculum and the organizational climate of the school are factors that have also been found to be related to student achievement. According to Bulach and colleagues, "the data suggest that school climate makes an independent contribution to

student achievement levels over and above the socioeconomic status of students. Because school climate scores can be raised, this is very encouraging for further research in this area" (p. 26). The implication is that even schools working with students of lower socioeconomic status and with lower levels of parent education can positively impact test scores by improving the climate of the school.

Educators are also exploring the different aspects of organizational climate in schools to define the term with more clarity and to discover which aspects most affect student achievement (Parish, 2002). One definition of school climate is "the attitudes, beliefs, values, and norms that underlie the instructional practices, the levels of academic achievement, and the operation of a school" (McEvoy & Welker, 2000, p. 134). A similar definition was offered by Lezotte (1984). He differentiated between the learning climate of a school and its physical attributes. He defined school learning climate as "the norms, beliefs, and attitudes reflected in the school's institutional patterns and behavioral practices that enhance or impede student achievement" (p. 53). Another definition is "the set of internal characteristics that distinguish one school from another and influences the behavior of its members. In more specific terms, it is the relatively stable property of the school environment that is experienced by the participants and affects their behavior and is based on their collective perceptions of behavior in schools" (Hoy & Hannum, 1997, p. 291). While definitions of school climate vary, most attempt to operationalize the "feel" of a school. There is also a lack of consensus on the factors that constitute the climate of schools.

The terms "school climate" and "school culture" are sometimes used

interchangeably, and there is little agreement concerning the difference between the two (Glenn, 1994; Deal & Peterson, 1999; Stolp, 1996; Hoy, Tarter, & Bliss, 1990). However, school culture is generally viewed as more immutable than school climate. Traditions and rituals are often included when describing a school culture (Black, 1997; Fiore, 2001). Fiore described the difference as being like an iceberg. The part that is seen on the surface is the climate. It is easily perceived and is more readily modified by the elements. Underneath the surface, however, there is a large, unseen, complex mass. That structure is analogous to the culture of a school. It is more difficult to describe, and is more resistant to change. Peterson and Deal (1998) referred to culture as "the underground stream of norms, values, beliefs, traditions, and rituals that has built up over time as people work together, solve problems, and confront changes" (p. 28). Black (1997) described culture as the values, traditions, and beliefs that we carry with us. She stated that organizational climate consists of shared perceptions and feelings which come from the setting and structure of an organization and the interactions of people within the organization. Since school climate is more readily observed and modified than is school culture, it was the focus of this dissertation.

There are several instruments which attempt to operationalize school climate. One of the more frequently used and modified survey instruments attempting to identify and explore school climate factors is the School Learning Climate Assessment by Brookover, Beady, Flood, Schweitzer, and Wisenbaker (1979). This instrument includes surveys for teachers, students, and principals. The dimensions of school climate assessed by the teacher portion of this instrument are expectations that students will attend college,

expectations that students will complete high school, teacher-student commitment to improvement, perceptions of principal's expectations, and sense of academic futility.

The School-Level Environment Questionnaire developed by Fraser (1994) is another frequently used school climate survey instrument. It measures eight dimensions of school climate. They are student support, affiliation, professional interest, staff freedom, participatory decision making, innovation, adequacy of resources, and work pressure.

Profile of a School by Likert (1986) measures nine similar constructs. They consist of decision making, communication, commitment to goals, coordination, influence, support from the leader, trust in the administration, peer relationships, and conflict resolution.

Another frequently used climate instrument, the Organizational Climate Description Questionnaire, revised by Hoy, Tarter, and Kottkamp (1991) rates schools on a scale from open to closed along dimensions of principal behavior described as supportive, directive, or restrictive. Teacher behavior is also rated along three dimensions. They are collegial, intimate, or disengaged.

Hoy et al. (1991) offer another perspective for examining school climate, that of school health. In this instrument, the Organizational Health Inventory (OHI), schools are rated on three levels, the institutional, managerial, and technical. The institutional level consists of items measuring Institutional Integrity. The managerial level consists of items relating to leadership (Collegial Leadership and Resource Influence). The technical level consists of items relating to Teacher Affiliation and Academic Emphasis.

However the dimensions of school climate are described in the professional literature, the organizational climate of the school is important to student achievement at all levels (Bulach, Malone, & Castleman, 1998; Johnson, 1998; Linzy, 1990; Waller, 1990; Walton, 1995; Chapman, 1998). At the elementary level, however, classroom climate has been studied more extensively than overall school climate. A study of individual classrooms lends itself to the use of case studies (Kibler, 2001; Peters, 2002; Picard, 1998). For survey research, using classrooms as the unit of measure enables the researcher to obtain an adequate sample using fewer schools than when the school itself is the unit of measure. Most studies of classroom climate found sample students and/or staff in only one or two schools (Gresham, 1999; Harradine, 1999; Martin, 2001). As important as classroom climate is, as it becomes increasingly necessary for educators to improve student achievement, further examination of school climate and its effect on student achievement is warranted. The focus of this dissertation is the association between school climate and the Virginia Standards of Learning tests at the third and fifth grade levels.

Statement of the Problem

Schools are responsible for ensuring that their students perform at least to the level of state standards. Educators must find ways of achieving this outcome or risk losing accreditation of the schools. The relationship between school climate and student performance has been studied more extensively at the secondary level than at the elementary level. However, as Seaman and Yoo (2001) noted in a study of dropout prevention strategies, the pattern for student success or failure begins and develops well

before high school. It is imperative that elementary schools explore ways in which they can positively affect student performance. This study addresses one way in which schools can do this by investigating the association between school climate and student performance on state assessments at the third and fifth grade levels. School leaders can use this information to make changes within their schools to positively affect student performance on state assessments by improving school climate. For example, if the school had used the Organizational Health Inventory (Hoy & Tarter, 1997; Hoy, Tarter, & Kottkamp, 1991) to assess the climate and had discovered that teachers rated it low on the technical level (Teacher Affiliation and Academic Emphasis), the teachers and principal could begin to address these areas. The principal could model supportive collegial behavior and demonstrate high expectations for student achievement. Teachers could be given more opportunities to work together in meaningful ways to support student achievement. The climate assessment can be a tool to gain insight and open this dialogue.

This dissertation explored the perception of teachers regarding different aspects of the climate of their schools. Correlations between these climate indicators and student performance on the Standards of Learning tests were examined in order to answer the question: What is the relationship between school climate and student performance on Virginia Standards of Learning assessments at the elementary level? Additionally, this study investigated which aspects of school climate assessed by the chosen instrument are most closely associated with higher levels of student performance.

Research Questions

1. Is there a relationship between school climate and third grade student performance on the Virginia Standards of Learning tests? What is the effect of controlling for socioeconomic status on the relationship?
2. Is there a relationship between school climate and fifth grade student performance on the Virginia Standards of Learning tests? What is the effect of controlling for socioeconomic status on the relationship?
3. Are any school climate indicators correlated more strongly than others with results on the Standards of Learning tests?

Conceptual Framework

The relationship between organizational climate and performance has been explored within the business community since the 1960s (Litwin & Stringer, 1968; Schneider & Bartlett, 1968; Taguiri, 1968a). The application of this concept to the field of education is more recent (Brookover et al. 1979; Hoy & Miskel, 1987; Owens, 1981). However, as more educational experts realize the effect of school climate on achievement, the study of it has begun to grow. Some studies focus on the effect of the leadership style of the administrator on school climate (Chapman, 1998; Schulman, 2002; Walton, 1990; Witziers, Bosker, & Krüger, 2003). Other factors affecting school climate such as teacher morale (Warych, 1992), teacher job satisfaction (B. Johnson, 1998), or professional treatment of teachers (Chapman, 1998) have also been studied.

Schools are complex organizations. They have many interdependent subsystems. Students interact with many parts of the system of the school within their daily learning.

Schools are being held accountable for delivering a good "product" in terms of student outcomes. The way of measuring these outcomes in many states is through performance on standardized tests. If students are not successful, then the school is termed "failing." In order to improve student achievement and improve "pass rates" in schools, educators are examining many aspects of schools to determine key variables that influence achievement.

Just as organizational climate in business has been shown to affect performance, school climate has also been shown to have an effect on student achievement. Since most of the school climate research is at the secondary level, this study provides useful insights about school climate effects at the elementary level. Results at the elementary level have been mixed, with some researchers finding a positive relationship between student achievement and school climate (McEvoy & Welker, 2000; Walton, 1990) and others finding no relationship (Haymon, 1990; Schulman, 2002). This study further examines the aspects of school climate and their relationship to student performance.

Definition of Terms

School climate. School climate can be described as the set of characteristics that distinguish one school from another, or give a school its "personality" (Hoy, Tarter, & Bliss, 1990). For the purpose of this study it will be defined as the quality of the school which is perceived by members of the school environment and affects their behavior. It is relatively stable over time (Hoy & Tarter, 1997). This study is examining five aspects of school climate: Teacher Affiliation, Collegial Leadership, Resource Influence, Academic Integrity, and Academic Emphasis.

School climate frameworks. School climate frameworks describe the school climate variables explored by various instruments or authors.

Student Achievement. In this study, student achievement is defined as student scores on the Virginia Standards of Learning tests for third and fifth grade.

School culture. School culture can be defined as "strongly held beliefs, values, and assumptions of a group" (Fiore, 2001, p. 8). Culture is more difficult to change than climate and is less readily observed.

Chapter Two

Review of the Literature

In order to understand organizational climate in schools, it is helpful to examine the concept as it began in other disciplines. Organizational climate as it relates to business and psychology is discussed first. The concept, defined as the character of the school that is perceived by members of the school environment and affects their behavior, is then examined as it has been applied to research in elementary and secondary schools. Several frameworks for operationalizing school climate are discussed. The stability of school climate over time is explored. Next, studies linking school climate and student achievement are examined. Finally, the Virginia Standards of Learning tests, the achievement measure used in this study, are discussed.

Roots of Organizational Climate in Business

Organizational climate is a term found in the literature from a variety of disciplines. In order to understand the concept as it applies to education, it is helpful to review its development in the disciplines of business and psychology. This research, conducted outside of the field of education, provides the background for the study of organizational climate as it applies to schools. According to Burke and Litwin (1992) the early research in the business field and the model they developed, based on their research and on the research of Renato Tagiuri (1968), found empirically testable organizational

and psychological variables linked to organizational climate. Researchers were able to predict and manipulate performance based on various organizational climates.

In their book on managerial behavior, Campbell, Dunnette, Lawlor, and Weick (1970) analyzed the work of several early researchers. In the field of business psychology, one of the earliest works they cited was from a 1964 article by Forehand and Gilmer. According to Campbell et al., Forehand and Gilmer's definition of organizational climate identified three aspects of climate. First, climate gives organizations their unique characters and sets them apart from one another. Second, the behavior of individuals within an organization is affected by the climate. Finally, characteristics of organizational climate tend to endure over time.

Georgopolous (1965) noted that attitudes and standards of behavior provide a normative structure which in turn acts as a source of pressure for directing activity. Litwin (1968) added that these norms as perceived by members of an organization contribute to the quality of the environment, or the climate. Litwin and Stringer (1968) defined six aspects of climate and measured them using a survey instrument that they developed. These included the perceptions of employees regarding:

- Structure – the extent of rules and regulations governing behavior.
- Individual responsibility – the extent of autonomous feelings.
- Rewards - the confidence of employees regarding compensation for doing a job well. These include pay, praise, and other incentives.
- Risk – - the degree of risk-taking and challenge within the organization.
- Support – the feeling of helpfulness and warmth in the organization.

- Tolerance of conflict – the degree to which the organization can tolerate differences of opinion.

Schneider and Bartlett (1968) also described six dimensions of organizational climate as perceived by managers in the insurance industry regarding the organization under their supervision. The authors viewed these climate indicators as possible predictors of employee performance. They included:

- Managerial support – the interest and support of managers for their subordinates. This also refers to the level of cooperation perceived by the managers.
- Managerial structure – the extent to which employees are expected to adhere to procedures and to produce new clients.
- Concern for new employees – the amount of emphasis managers placed on training and support of new employees.
- Intra-agency conflict – the extent to which managerial authority is undermined. This also refers to the extent to which in-groups and out-groups exist.
- Employee independence – This refers to the extent to which agents act on their own without regard for management.
- Satisfaction – the extent to which employees express satisfaction with management activities. This also refers to the level of social activities sponsored by the agency.

Tagiuri (1968b) discussed the concept of climate as it applied to organizations. He first justified the use of the term "climate" by discussing the meteorological definition of the term. According to Tagiuri, "weather is a single occurrence or event in the series of conditions that constitute the climate. Climate is a convenient way of referring simultaneously to various atmospheric features and to a typical series of events" (p. 19). He then noted that climate is an appropriate metaphor, in that when the term is applied to the field of behavioral science "the agreement with the meteorological concept is more in the function of such a concept than in level of operational definition or measurement" (p. 20). Tagiuri continued to explore the concept of climate, breaking it into four aspects: ecology, milieu, social system, and culture. Ecology refers to the physical aspects of the environment. Milieu refers to people and groups and social system to the pattern of relationships among these people or groups. Culture refers to the values, belief systems, and cognitive structures of the social environment.

In another chapter in the same book, Tagiuri (1968a) examined this new notion of climate as it applied to executives. To determine which environmental factors make up the executive climate, he did a factor analysis of a survey given to managers. The climate factors he reported were:

- Direction and guidance – this relates to defining objectives and planning. It also relates to the qualities of top management and its concern for lower level managers.
- Professional atmosphere – this relates to the extent to which managers can act on their own initiative and develop professionally. This also relates to

the qualities of other workers, both subordinates and those at the same level and the basis upon which performance is evaluated.

- Qualities of superiors – the extent to which superiors are perceived as competent, responsible, possessing personal integrity, fair, and consistent.
- Qualities of department – the level of cooperation among employees. This also refers to the perceived qualities and pleasantness of coworkers.
- Results, autonomy, and satisfaction – the extent to which the company is perceived to focus on profits and sales and to provide a stimulating and rewarding environment.

Campbell et al. (1970) found factors of climate common to the aforementioned studies and other studies (Litwin and Stringer, 1968; Schneider and Bartlett, 1968; Tagiuri, 1968b). From these common factors, they developed a composite of four climate factors. These included:

- Individual autonomy – the extent to which the employee can make his or her own decisions.
- Degree of structure – the degree to which the expectations of superiors regarding objectives and procedures are communicated to subordinates.
- Reward orientation – The authors did not find as much agreement between these factors as others, and found a larger variation in the breadth of the concept. They found, however, that some type of reward element is present in all the studies.

- Consideration, warmth, and support – Again, the authors did not find this factor to have as clear a consensus of definition as the others. However, they did note that all studies had some type component related to the stimulation or support received from superiors.

Since the concept of organizational climate was first studied in the 1960s and 1970s, certain aspects of it have been explored in greater depth. A further exploration of the reward orientation was conducted by Stajkovic and Luthans (2003). In this study, they performed a meta-analysis of the effects of three reinforcers (money, feedback, and social recognition) on employee performance. All three were found to positively affect performance if applied contingently, meaning that rewards were applied only if the employee was utilizing behaviors that positively affect performance. Further, the authors found that simultaneous application of all three reinforcers had a stronger effect on performance than when only one or two were used.

Fernandez and Hogan (2003) looked in a different direction than reward and focused on the character of organizations. They presented four organizational characters, an achievement character, a collaborative character, a creative character, and a safekeeping character which they then related to certain types of organizational climates. According to the authors, by identifying and understanding the character of an organization, the strengths and weaknesses of an organization can be addressed.

In addition to reward orientation and corporate character, researchers in psychology and business examined aspects of human resource management and climate and their impact on certain outcomes. In a 2001 study, Rogg, Schmidt, Shull, and Schmitt

sampled 385 franchise dealerships of one automotive manufacturer. They found that "human resource practices influence organizational climate which in turn influences customer satisfaction indices" (p. 443). Gelade and Ivery (2003) had similar findings when they explored human resources management as it relates to climate and thus to organizational performance. In their study of branches of a United Kingdom retail bank, they found significant correlations between work climate, human resource practices, and organizational performance. They summarized their findings by stating that decisions made by human resources managers have both a direct and an indirect influence on performance. Human resource decisions indirectly affect performance by either enhancing or depressing the climate. The climate then impacts the changes in the organization's performance.

In the 1980s corporate culture began to be discussed. The impetus was the success of Japanese firms in contrast to similar American firms experiencing less success. Authors attributed this success to the commitment of Japanese firms to common values, assumptions, and beliefs (Lim, 1995). Lim went on to note, however, that there have been few studies examining this purported link between organizational performance and organizational culture. He found that there was a lack of association between organizational culture and short-term organizational performance in the studies he reviewed. Performance is defined as the degree to which goals relevant to the organization are achieved.

Lewis (1996) found that the literature on organizational culture disagrees on the perception of whether organizational culture can be changed. She stated that this is

determined "by their view of culture either as a variable of an organization or as a root metaphor, a variable being much more easily changed" (p. 9). She noted that often behavior change is all that is desired when culture change is discussed. These behavior changes sound as if they may have more of a link to corporate climate than to corporate culture, although culture seems to have evolved as the more popular term. Lewis also found that the literature that discusses changing the corporate culture often focuses on outlining the steps to be taken to bring about the change. She noted, however, that the literature has "stated almost unanimously that culture change is difficult and time consuming and cannot be rushed into directly" (p. 10).

One article outlining steps for culture change is by Young (2000). He presented an idea for changing or maintaining corporate culture. Instead of outlining a series of steps, he presented these organizational processes as levers which are used together. These levers are 1) formulating a strategy, 2) exploring influence and authority, 3) designing a motivation process, 4) establishing a management control process, 5) managing conflict, and 6) managing customers. Young noted that in designing each process, managers must also study the links between it and the other five processes. The process of culture change as outlined in this article is complex since the links between all five levers must be understood and examined. Furthermore, managers must be aware that there is no one correct culture.

Detert, Schroeder, and Mauriel (2000) discussed the relationship between corporate culture and systemic change initiatives. They presented a culture framework as it relates to Total Quality Management. To create this framework, the authors examined

the cultural values which underlie Total Quality Management and linked them to dimensions of organizational culture. They stated their hope that their article had begun to "address the current ambiguity about the concept of culture and its relationship to systemic improvement initiatives" (p. 859). They believed that their review of the literature and the application framework for the culture dimensions of the Total Quality Management model presented would provide a foundation for other researchers. The authors stated that

> cumulative empirical research, based on a solid theoretical framework, is the only way to bring valid evidence to bear on the question of how organizational culture supports or inhibits systemic change implementation. We hope others will join in this quest to replace anecdotes, intuition, and vague statements about the importance of culture with more formal theory and empirical evidence. (p. 859)

Sorenson (2002) also investigated corporate culture as it relates to corporate change. He examined the relationship between corporate culture and the reliability of a firm's performance. He concluded that while strong-culture firms excel at incremental change and are reliable in their performance in stable environments, they are less able to adapt to rapidly changing conditions. Bruch and Ghoshal (2003) draw similar conclusions based on an ongoing action research project involving six global companies. They state that in stable environments, the alignment of organizational culture, strategy, and the structures of the organization improves performance. However, when the environment changes the tight alignment of these same aspects of the corporation negatively affects the company's capacity to develop the energy needed to change and to overcome its

rigidity. Culture does not change easily or quickly. When viewed in this light, the results of these projects are not surprising. A strong culture accustomed to incremental changes would have difficulty reforming itself to make the quick changes a rapidly changing environment would require.

Another recent study has linked organizational culture to organizational climate (Johnson, 2000). In this study, the author surveyed over 8,000 employees of a government service agency on aspects of quality culture and climate. The purpose was to examine the implications for organizational effectiveness. She found that supervisory personnel scored both climate and culture variables more positively than did non-supervisory personnel. Johnson stated that this supports other research in both the public and private sectors showing that employees in greater control of the requirements have higher levels of job satisfaction than employees at lower levels.

Since it was first discussed in the business and psychology literature in the 1960s, many aspects of organizational climate have been defined and explored. Most of the study of climate focused on the relationship between it and organizational or employee performance. Links between climate and culture have also been studied. Culture is viewed as more difficult to change than climate and some authors continue to use the terms synonymously.

Organizational Climate as it Applies to Schools

The concept of organizational climate in business became an important factor for businesses to consider when looking at organizational performance. By manipulating climate variables, businesses found ways to improve their "bottom line." Schools, too,

have come under increasing pressure to improve their "product" in terms of the learning outcomes with children.

Owens (1981) noted that the "concept of organizational climate is a useful way of viewing organizational behavior in schools and of helping us understand that behavior better and possibly to develop strategies for directing and controlling it more effectively" (p. 190). Owens wrote that group norms, the standards institutionalized and enforced by the social system, are an important way in which behavior is influenced by organizational climate. Additionally, he found that individual behavior within an organizational setting is influenced both by the personal characteristics of the individual and by the setting and situation experienced by that individual.

In a later edition of the same book, Owens (1991) demonstrated a shift in focus from school climate to school culture similar to that seen in the business studies in the previous section. Just as Johnson (2000) linked climate and culture in her study, Owens, too, discussed the link between school culture and school climate. He stated,

> The terms *culture* and *climate* are both abstractions that deal with the fact that the behavior of persons in organizations is not elicited by interaction with proximate events alone but it is also influenced by interaction with intangible forces in the organization's environment. As I shall explain more fully, culture refers to behavioral norms, assumptions, and beliefs of an organization, whereas climate refers to perceptions of persons in the organization that reflect those norms, assumptions, and beliefs. (p. 171)

Owens did more fully explain the differences between climate and culture. He again emphasized that climate refers to the perceptions of people within the organization. He also noted that job satisfaction is often associated with organizational climate.

Woods and Weasmer (2002) also discussed teacher job satisfaction and school climate. In an article focused on maintaining job satisfaction among teachers, they noted that satisfaction improves job performance, increases collegiality, and affects student outcomes. Giving teachers opportunities to share leadership and influence the curriculum was found by the authors to enhance satisfaction. Enhanced collegiality and collaboration among teachers was also important to both the climate of the school and teacher job satisfaction.

In a study of teacher satisfaction involving urban middle school teachers, Shann (1998) also found that teacher collegiality was very important to satisfaction. She also discovered that teachers in higher achieving schools were more satisfied with teacher to teacher relationships than were those in lower achieving schools. Additionally, they were found to be more satisfied with the curriculum. All teachers surveyed were dissatisfied with their level of involvement in decision-making in their schools. They wished to have a greater involvement in the process.

Brost (2000) also supports shared decision-making as a tool to improve student performance. Shared responsibility for student performance, collaboration, and high expectations were factors associated with high achieving schools. Shared decision-making is also effective for addressing issues associated with school climate. Although Brost focused his study on high schools, these traits were consistent with the studies of

elementary and middle schools mentioned previously. Brost also noted that strong leadership skills are necessary to develop this kind of shared decision-making. Teachers must be led to understand in which decisions they need to involve themselves and which decisions are best made by the administration with little teacher input.

As in the disciplines of psychology and business, there has been discussion in the field of education regarding the distinction between climate and culture. Hoy and Tarter (1997) distinguished between climate and culture by stating that culture "consists of shared assumptions and ideologies, whereas climate is defined by shared perceptions of behavior" (p. 6). They went on to state that studies of climate tend to be more concrete in nature, use survey research techniques, and are generally for the purpose of improving the organization studied. Culture studies lend themselves to a more qualitative approach and are more descriptive in nature.

Brookover and Erickson (1969) likened the school to other institutions which have limited interaction with outside organizations. They noted that other such institutions are hospitals, prisons, or military units. These institutions have two sub-units of differing degrees of power. The most extreme example is the prison in which the warden and others in charge set the rules and regulate the behavior of the prisoners. Schools and hospitals also have two different sub-units within their systems. The roles and functions of doctors and nurses in a hospital are quite distinct from that of patients. Similarly, in a school the roles of teachers and staff are quite different from that of the students. They also noted that, like military officers, teachers are held responsible for the achievement of goals by others.

Sweetland and Hoy (2000) defined school climate: "a relatively enduring quality of the entire school that is experienced by participants, describes their collective perceptions of behavior, and affects their attitudes and behavior in the school" (p. 706). They arrived at this definition based on four assumptions derived from the early climate research in business and psychology. The four assumptions are:

- that climate encompasses the entire organization.
- that climate is defined by the perceptions of members of the organization.
- that the climate stems from behaviors of members and those behaviors are based on what is important to members
- that climate, in turn, influences the attitude and behavior of members of the organization.

Griffith (2000) examined how the consensus among students and parents regarding their perceptions of the school climate related to their evaluation of the school environment. He then analyzed the combined effects of student and parent consensus on certain outcomes. He found significant positive relationships between evaluations of schools by both students and parents and student satisfaction and performance. Parent involvement and satisfaction was also positively related to student and parent evaluations. Schools showing higher levels of consensus between perceptions of parents and students also showed a stronger relationship between these factors.

Schools have begun to look at the effect of the organizational climate on learning outcomes. Studies have examined the effect of climate on teacher job satisfaction. They have looked at the organizational and decision-making structures of schools and their

effect on student learning. The concepts of climate and culture as they apply to schools have been studied. Definitions of school climate and culture draw heavily on the research in the disciplines of business and psychology. Just as businesses looked at the concept of climate to improve their profits, so have educators hoping to improve student performance begun to do more research on the effect of climate in the schools.

School Climate Frameworks

As school climate has become a subject for research, several authors have attempted to develop frameworks to measure climate. The frameworks generally were designed to provide researchers with a breakdown of factors influencing organizational climate in schools. Factors could then be studied in an effort to improve climate with the expectation that it would result in increased effectiveness of schools. This subsection of the review of the literature gives an overview of some of the studies that have helped to define school climate. The frameworks used in these studies have been used in subsequent research in schools.

Halpin and Croft (1963) defined one construct of school climate as the openness of the climate. They described climate along a continuum from open to closed. An open climate is authentic, meaning that members are genuine in their actions. The principal provides direction, structure, and support when appropriate. Teachers function in leadership roles when appropriate to the situation. Both achievement and social needs are addressed in open climate schools. A closed climate, in contrast, is a school in which teachers are apathetic and frustrated. Trivial tasks take precedence and the principal is seen as supervising teachers too closely. At the same time, this supervision is viewed as

aloof and inconsiderate. Hanson (1991) noted that no system can be either entirely open or entirely closed. He observed that systems maintain degrees of openness and closedness according the type of decision or pressure present at the time. He noted that a school may be open to parental advice regarding curriculum but closed regarding appropriate measures for discipline.

Hoy, Tartar, and Kottkamp (1991) added another dimension to that of openness or closedness, that of organizational health. Organizational health was viewed as another lens through which to study climate. According to Hoy et al. this concept was first applied to schools by Matthew Miles in 1965. Healthy organizations grow and prosper over the long term. While no organization is optimally effective all the time, healthy organizations avoid persistent ineffectiveness. Hoy et al. summarized ten characteristics of healthy organizations. These characteristics stem from the theories of Parsons (1951). According to Parsons, there are four functions necessary for organizations to succeed. They are goal attainment, integration, adaptation, and latency. Goal attainment refers to the ability of an organization to set clear goals and obtain the resources needed to accomplish those goals. Integration refers to the social cohesiveness of the workers within the organization. Adaptation refers to the ability of the organization to cope successfully with its environment. Latency refers to the development of a cohesive value system within the organization.

Parsons (1967) also hypothesized three levels of control over these needs, including technical, managerial, and institutional levels. He stated that in schools, the technical level could be seen as the teaching process. Teachers and administrators are

responsible for solving problems associated with this level. The functions of the managerial level would be the administrative functioning of an organization. In schools, the principal is the chief administrative officer, and has most of the responsibility for the managerial functions. The institutional level connects the school and its environment. The school board provides the connection and should serve to buffer the school from undue pressure from groups or individuals outside the school.

This theoretical perspective provided the basis for the ten characteristics of healthy organizations. The first three were described as focusing on task needs. They included goal focus, adequate communication, and equitable power distribution. The next three characteristics were viewed as concerning how the group and its members maintain themselves. They included utilization of resources, cohesiveness, and morale. Parsons indicated that organizations must deal with the need to grow and change. Characteristics related to this need included innovativeness, autonomy, and adaptation. Finally, healthy organizations have effective means for solving problems.

Hill (2003) mentioned 10 dimensions of organizational health. They are:

- goal focus, or the ability to have and support clear goals and objectives,
- communication adequacy, or the extent of open communication
- power equalization, or the ability to distribute influence equitably between team members and the team leader
- cohesiveness or the clarity of the sense of identity of the group
- morale is the feeling of well-being and satisfaction

- innovativeness is the ability to allow for invention, creative thinking, and risk-taking
- autonomy is the ability of the group to manage the things those things which they believe should be part of their responsibility
- adaptation is the ability to cope with external demands
- problem-solving adequacy refers to the ability to perceive and manage problems efficiently.

All of these dimensions, according to Hill, can be found at various stages of development within schools and departments.

In their book *Educational Administration*, Hoy and Miskel (2005) stated that organizational health is positively correlated with student performance. The belief held by teachers that they can positively affect student learning was also positively correlated with the health of the school. They went on to state that "school health is related to a host of other important school variables. For example, it is positively related to humanism, teacher participation in decision making, a strong school culture, and a variety of measures of school effectiveness" (p. 193).

Anderson (1982) applied Tagiuri's social climate model, described in the previous subsection of this review, to schools. The ecology variable was related to the physical plant. Milieu was related to student characteristics and teacher morale. Social system consisted of instructional programs and the rapport between teachers and administrators. Finally, culture was defined by the commitment and cooperation between teachers, expectations of administrative staff, and the goals of the school. This framework included

objective data such as student demographics and information regarding the physical plant as part of the climate as well as perceptions of students and staff.

Brookover et al. (1979) identified variables which influenced the climate and the social structure of a school. In turn, these variables were viewed as affecting student outcomes. First, Brookover and colleagues discussed the composition of the student body and other variables such as school size, teacher qualifications, and average daily attendance of students. Another set of variables had to do with parental involvement, the openness or closedness of classrooms, and the amount of instructional time. These variables interacted with one another and with variables the authors developed from teacher, student and principal reports regarding expectations, perceptions of appropriate behavior, and feelings regarding the roles of self and others in the school. These variables also included perceptions of expectations for achievement, and commitment to improvement.

Stability of School Climate Over Time

Although climate is generally seen as more malleable than culture, it is a relatively stable factor (Hoy, Hannum, & Tschannen-Moran, 1998; Hoy & Tarter, 1997). In a study of middle school climate and student achievement, Hoy et al. (1998) found that "the influence of climate on student achievement continues over time. The climate patterns that predict high student achievement in the first year also predict school achievement levels two years later" (p. 353). The climate factors found in the study to be associated with student achievement were environmental press, collegial leadership, teacher professionalism, and academic press. Environmental press refers to pressure from

the community and from parents. Collegial leadership refers to a principal who is friendly and supportive but also establishes and maintains high levels of teacher performance. Teacher professionalism means that teachers are committed to their work and to their students. Finally, academic press means that the environment is orderly, serious and focused on academics. Changing school climate is seen as a process. In a model outlined by Hoy and Tarter, it is a joint effort of the principal and teachers. This model called for a diagnosis of what needs to be changed, development of a plan, implementation, and evaluation.

Another school improvement model (Howard, Howell, & Brainard, 1987) outlined an eight step process to improving school climate. Steps one through three consist of preparing for the change by appointing a team, gathering data, and raising awareness of faculty, parents, and students. Step four is assessing the current climate, and then in step five, setting priorities. The task force goes to work in step six and evaluates its work in step seven. Finally, step eight is evaluating the overall improvement of the climate.

A study by Kenney and Butler (1993) provides some possible evidence of the stability of school climate. A program to improve the school learning climate was implemented in 93 Tenessee schools. Data on climate change were examined and comparisons were made between schools that had been using the program for one year and those that had been using it for three years. The data suggested that 62% of the schools would be expected to improve on climate variables over a three to four year period while only 39% would be expected to show improvement in one year. The authors

stated that the stability of school climate might offer an explanation for the findings and suggested that changing school climate is a long-term process.

As can be seen in this section reviewing the work of Hoy et al. (1998), Hoy and Tarter (1997), Howard et al. (1987), and Kennedy and Butler (1993), school climate is a stable factor. The influence of climate on student achievement has been shown to persist over time. This dissertation focused on school climate rather than school culture because researchers agree that it is more amenable to change. However, making changes to the school climate is a process. Studies have outlined some possible steps for achieving school climate change. Doing so takes time and commitment from teachers and from administrators.

Organizational Climate and Student Achievement in Elementary Schools

Studies of the association between school climate and student achievement have had mixed results at the elementary level. A study using a national sample failed to yield a significant relationship between climate as measured on the School and Staffing Survey and achievement as measured by the National Assessment of Educational Progress. State studies have been more varied in their results, some finding a strong association and others finding almost no association between climate and achievement.

McLaughlin and Drori (2000), in a report for the U.S. Department of Education, examined data from the School and Staffing Survey (SASS) which consisted of surveys of districts, individual schools, principals, and teachers. The SASS used a national sample. McLaughlin and Drori matched SASS data with achievement scores in reading and mathematics on the National Assessment of Educational Progress (NAEP). Data

from 1,123 elementary schools, 496 middle schools, and 595 high schools in 20 states were collected and analyzed. School climate variables included problems with student behavior which had been identified by teachers. These problems consisted of tardiness, lack of academic challenge, dropping out, vandalism, drug or alcohol abuse, physical conflicts, physical or verbal attack on teachers, absenteeism, apathy, robbery or theft, disrespect of teachers, and weapons in the school. Other organizational features closely related to climate indicators measured in other studies (Casteel, 1994; Johnson, 1998; Schulman, 2002; Waller, 1990) were teacher influence defined as the control teachers have over school policies and classroom arrangements; normative cohesion, or shared beliefs and values, clearly defined expectations; clear goals; clear and consistent rules; and cooperation among school staff.

The school climate variables as measured on the SASS were not shown to significantly correlate with student performance on the NAEP at the elementary level. McLaughlin and Drori (2000) speculated that this might be due to the fact that the frequency of the negative behaviors included as climate variables (e.g. attacks on teachers, tardiness, drug or alcohol abuse) increases with age. Adding to this, the behaviors are sufficiently rare to make a correlation difficult to find at the elementary level. Normative cohesion, or a sense of shared beliefs and values, was also found to have no relationship to student performance. Normative cohesion was, however, a strong correlate with behavioral climate and teachers' sense of control. Teachers' sense of control was also not found to be correlated to student performance at the elementary level. When the data were broken down to examine the results for each state individually,

the correlation of school climate factors with student performance was higher than the correlations found across the states. Although the results of this study were disappointing at the elementary level, more than anything they indicate the need for further research using instruments which better define the climate of elementary schools.

Although results of studies at the elementary level have been mixed, some studies within individual states have found a relationship between school climate and student achievement. Bulach, Malone, and Castleman (1995) found a high correlation between school climate as measured by the Tennessee School Climate Inventory (TSCI) and student performance on the California Test of Basic Skills. Six hundred eleven teachers and principals from twenty-seven elementary schools in Western Kentucky were surveyed for this study. The variables measured by the TSCI are

- Order – the extent to which students demonstrate appropriate behaviors and the environment is orderly
- Leadership – the extent to which instructional leadership is provided by the principal
- Involvement – the extent to which parents and the community are involved in the school
- Instruction – the extent to which the instructional program is developed and implemented
- Environment – the extent to which a positive learning environment exists
- Collaboration – the extent to which administration, students, and faculty cooperate and participate in problem-solving.

In addition to the correlation between school climate and student achievement, the authors found a correlation between student achievement and socioeconomic status. The authors were encouraged to find that the correlation between school climate and student achievement was stronger than the relationship between climate scores and socioeconomic status of students because "school climate scores can be raised whereas the socioeconomic status of students is difficult to change" (p. 27).

Bruce Johnson (1998) conducted a study of similar size to that of Bulach et al. (1995). His study explored teachers' perceptions of school climate in 59 elementary schools in New Mexico. The School Level Environment Questionnaire was used to collect data regarding teacher perceptions of school climate. Climate data were correlated with the New Mexico Achievement Assessment called the TerraNova. Johnson found a significant positive correlation between school climate and student achievement. Johnson also found that items dealing with whether teachers perceived schools as being good for students and similar questions regarding how good schools are for teachers were also significantly related to school climate factors. Johnson stated that schools "in which teachers perceived a positive school climate, with a high degree of affiliation among teachers, an atmosphere of innovation, high involvement of teachers in the decision making process, cooperative, friendly students, and adequate resources and facilities, had better average student achievement" (p. 86). Johnson noted that there might be other factors which were not measured that influenced both school climate and student achievement.

Similar results were found in a Florida study (Linzy, 1990). Significant relationships were found between school climate variables and student performance on the California Test of Basic Skills at the fifth, seventh and ninth grade levels. Patricia Johnson (1998) found similar results in a study of magnet and nonmagnet schools in Maryland. Her study used the School Social Climate Questionnaire by Brookover et al. (1979) to assess both student and teacher perceptions of school climate. Fifth grade students and fourth and fifth grade teachers responded to the survey. Student performance was measured by the Iowa Test of Basic Skills. Both teacher and student perceptions of climate in magnet and nonmagnet schools had a significant positive relationship to student performance.

Waller (1990) studied school climate as one factor related to performance of low socioeconomic level students in the Charlotte-Mecklenburg, North Carolina school system. Performance on the California Achievement Test was found to be higher when scores on the Organizational Climate Description Questionnaire were higher. Performance in schools with lower climate scores was found to be lower. The author found a significant relationship between the percentage of students on free lunch and performance on the standardized test only at the extremes (either the lowest or the highest free lunch groups). In those cases, performance was found to be higher when the percentage of students on free lunch was lower.

Similar results were found in a study of 13 rural schools in Georgia (Walton, 1990). Walton found a statistically significant, positive relationship between teacher perceptions of school climate as measured by the School Learning Climate Assessment

Instrument and student performance on the Georgia Third Grade Criterion Referenced Test.

A study of 55 schools in the First Tennessee school district provided different findings to those of the studies discussed above (Casteel, 1994). No relationship was found between principal and teacher perceptions of school climate as measured by the Profile of a School survey and student performance as measured by Tennessee value-added assessment. The value-added measure is obtained from student test scores on the Tennessee Comprehensive Achievement Program test scores. Value-added scores represent gains made by students on these tests over a three year period. The methodology used in calculating the value-added scores may account for the lack of a relationship. Value-added assessment scores are different from performance measures used in other studies using the Profile of a School climate measure. Additionally, schools in the study may have been more homogeneous than those used in other studies since this study deals with only one district.

A Texas study also found no relationship between a student performance measure and a school climate measure (Gibbs, 2000). The School-Level Environment Questionnaire was used to measure school climate. Student scores on the Texas Assessment of Academic Skills were used as the measure of student performance. This study may have encountered the same problem of homogeneity of schools as Castleman's study did since Gibbs studied only eight schools from one district. Schulman (2002) had a larger sample, with 30 schools. Schulman also found no relationship between school climate as measured by the Organizational Climate Description Questionnaire – Revised

and student performance on the fourth grade English Language Arts Test. This test is a state standards test in New York. Homogeneity of the schools may also have limited the results. Although 30 schools were used in the study, all were part of one urban school district in Westchester County, New York.

Only one study was found relating school climate to student achievement on the Virginia Standards of Learning Tests at the elementary level (Chapman, 1998). Chapman used a professional treatment index which was derived from highly related school climate variables. Student performance on the SOL tests was higher in schools reporting higher levels of professional treatment. One of the key attributes of professional treatment on the survey was a comfortable and caring environment. Other variables related to school climate were professional and personal respect, delegation of decision making, no fear of risk-taking, listening, support, high expectations, and encouragement. Chapman focused on the professional treatment of teachers by principals. His study was primarily concerned with the effect of school leaders on school climate and student achievement in one large Virginia school district.

Since studies at the elementary level are limited, more research is needed using a wider sample from all areas of the Commonwealth to allow for determining whether the results hold true for schools with different populations and in different settings. Since student achievement is critical, determining everything from school accreditation to funding, school leaders must look to research to find ways to improve student achievement in their own setting and with their student population.

High Expectations

The emphasis schools place on academics has been one factor of school climate consistently linked to higher levels of student achievement (Arnold, 1997; Goddard, Sweetland, and Hoy, 2000). Arnold found that in schools where the principal holds high expectations for teachers, teachers respond similarly to students. Goddard, et al. identified a construct they refer to as "academic emphasis." In schools scoring high on this variable, "teachers set high but achievable goals, they believe in the capability of their student to achieve, the school environment is orderly and serious, and students, as well as teachers and principals, pursue and respect academic success" (p. 686). The authors conducted a study of 45 elementary schools within one larger Midwestern school district. Academic Emphasis, as measured by part of the Organizational Health Inventory for Elementary Schools (OHI-E) was shown to be "positively associated with the differences in student achievement that occur between schools" (p. 698). The authors explain that the results "confirm the perceptions about the importance of student academic success and the effort required to attain it do matter to differences between schools in student achievement" (p. 699). Student achievement was measured by the Metropolitan Achievement Test (MAT 7) scores of fourth grade students in reading and mathematics.

In a review of the literature regarding high and low performing schools, Corallo and McDonald (2001) first looked at low performing schools. One common characteristic of low performing schools reported was low expectations for student achievement. Low performance is defined as failure to meet state standards. The authors also found that

community poverty and stress on the school's organization were also factors related to low performance. Schools that succeed despite adverse conditions have a focused instructional program and an emphasis on academics.

Bell, Jones, and Johnson (2002) concurred that lower expectations lead to lower performance. They stated that teachers who have low performing students "year after year may come to expect less of them" (p. 324). Teachers may lower expectations for these students and put less effort into helping them achieve. Further, minority students who do excel are often given less recognition for achievement than their white counterparts, according to the authors.

In a study of factors related to primary grade reading achievement, Taylor, Pearson, Clark, and Walpole (2000) found academic emphasis correlated with higher levels of reading achievement. Also found to be of significance were strong building-level communication, collaboration among teachers, and strong links to parents. A positive school climate was also found to be a characteristic of effective schools. Teachers who were businesslike and demonstrated a high level of attention to task and a sense of direction were found to be most effective in teaching students to read. These teachers also held high expectations for student achievement and did not give up when students failed, instead redoubling their efforts. This characteristic was especially true in schools successfully teaching reading to students of lower socioeconomic status.

In a lecture published in the *Journal of Negro Education,* Jacqueline Jordan Irvine reported results from an 18-month ethnographic study of four schools. In the study, it was found that students perform better and like school more in an environment where they

feel someone cares for them. One way that care is demonstrated in the classroom is through a teacher providing structure and limits and holding high expectations. Students felt cared for when teachers pushed them to achieve.

Van Acker and Wehby (1990) discussed the various social contexts of students. They found that most of the daily developmental routines of children occur within the neighborhood, peer group, and family. The school is the point where these social contexts come together. The authors discussed their belief that achievement is dependent upon school climate, family values and the peer networks of the student. They found that high achieving schools working with at risk populations were smaller and more nurturing than less effective schools. Ineffective schools often provided less instruction and praise to those students most at risk of failure.

High expectations for student achievement is one climate variable consistently associated with student achievement. Schools that provide a focus on learning as well as a sense of caring about the success of their students have been shown to have higher levels of student achievement. Students respond positively to teachers and an environment pushing them to excel.

Virginia Standards of Learning

The Commonwealth of Virginia adopted the Virginia Standards of Learning (SOL) in 1995. These standards set clear expectations for student learning in the areas of English, mathematics, history and social sciences, and science in grades kindergarten through 12. Since their inception, more than 20 states have modeled their standards after those of Virginia. Also, "Virginia's new SOL have received national acclaim for their

clarity, content, and measurability. Virginia is the only state to receive the American Federation of Teachers' highest rating in all four basic academic areas" (Thayer, 2000, p. 70).

Three years after the 1995 Virginia Board of Education approval of the Virginia SOL, in the Spring of 1998 the first assessment of the standards was given. Students in grades three, five and eight were given tests designed to measure their achievement of the standards. High school students were given tests at the end of specific courses for which standards had been developed. Testing continues to occur in these grades and expansion to include fourth grade began in 2003-2004.

For the first time since Virginia adopted the SOL, high school students graduating in 2004 were required to pass a specific number of tests in order to receive a standard or advanced diploma. Accreditation of Virginia schools at both the secondary and the elementary levels is based on the percentage of students passing the tests. In the 2006-2007 school year, public schools may be denied accreditation based on SOL scores (Virginia Department of Education, n.d.). In Virginia, the SOL tests have become true "high stakes tests."

As student performance on the SOL tests becomes increasingly important to the students themselves and to the schools which they attend, educators must continue to find ways to improve. As discussed in this review of literature, some studies from other states have indicated a possible correlation between student performance on standardized tests and school climate. Since unlike other variables, such as socioeconomic status, climate is an area amenable to change, school leaders can make positive changes regarding school

climate, thus affecting student performance. It is important to research which school climate variables are most highly correlated with student achievement so that school leaders can make changes which will provide the most positive outcomes.

The purpose of this study was to examine the correlation between school climate and third and fifth grade student performance on the Virginia SOL tests. The relative importance of the five dimensions of climate measured by the survey (Institutional Integrity, Collegial Leadership, Resource Influence, Teacher Affiliation, and Academic Emphasis) as they correlate to student performance was also examined. This review of the literature provided evidence of the stability of climate over time. However, it was also found that climate can be changed through a focused effort. This study can guide school leaders in the identification of areas that can be changed to affect student performance in a positive manner. This review of the literature found that student achievement was linked to high expectations of teachers. This was one of the climate indicators addressed by the survey instrument in this study.

Chapter Three

Methodology

Design of the Study

This study uses a non-experimental, correlational design in which the relationship between student achievement and school climate is explored. According to McMillan and Schumacher (2001), the use of survey data is an appropriate method for attaining descriptive data that can be used to explore the relationship between selected variables. The school climate variables studied, using a survey by Hoy and Tarter (1997), include 1) Institutional Integrity, 2) Collegial Leadership, 3) Resource Influence, 4) Teacher Affiliation, and 5) Academic Emphasis. The Virginia Standards of Learning assessment for grades three and five are used as the measure of student achievement. The subtests used in the correlations are in reading, mathematics, science, and social studies. These tests are given in May or June each year in all Virginia public schools.

Population and Sample

The population includes kindergarten through fifth grade teachers in the 1,164 public elementary schools in the Commonwealth of Virginia. A stratified random sample of 202 elementary schools across the eight superintendent regions received letters inviting their participation in the study. Across the Commonwealth, the proportion of schools sampled within each region was the same as that of the population from which the sample was drawn. This stratification was to ensure that all regions of the state were

represented. Non-respondents were sent follow-up letters. Originally, 56 schools elected to participate in the study for a participation rate of 28%. Of those, 9 had a response rate of less than 50% of the faculty and were eliminated from the study. The remaining 47 schools represent an overall response rate of 23%. The schools represented all eight superintendent regions and a variety of contexts. Table 1 shows the population, number of surveys sent, number returned, context (urban, suburban, or rural) of respondents, response rate from each region, and the range of per pupil expenditures of respondents from each region. The climate score was derived from the teacher surveys of all K-5 teachers in each building in the sample. Student achievement data from third and fifth grade SOL scores were obtained from the Virginia Department of Education for the May/June 2005 administration.

Table 1

Regional Information

	Region							
	1	2	3	4	5	6	7	8
Population	151	218	51	341	108	113	90	27
Sent	28	40	9	62	20	21	17	5
Returned	8	7	5	8	6	6	6	1
[a]Context	1, 2	1, 3	2	2, 3	1, 3	1, 3	3	3
Response	28.6%	17.5%	55.6%	12.9%	30%	28.5%	37.5%	20%
[b]PPE	$7,467-$9,376	$7,977-$9,672	$7,562-$9,713	$7,787-$15,961	$7,255-$9,120	$7,451-$9,690	$7,739-$9,116	$8,123

[a] 1=Urban 2=Suburban 3=Rural [b]PPE = Per Pupil Expenditure

Instruments

School climate.

School climate data were gathered using the Organizational Health Inventory for elementary schools (OHI-E) by Hoy, Tarter, and Kottkamp (1991). This instrument measures climate from the perspective of organizational health. The instrument measures five variables. The first, Teacher Affiliation, refers to the sense of friendliness among teachers and their commitment to students and to the mission of the school. The second is Institutional Integrity, or the ability of the school to accomplish its mission without undue influence from outside influences. Teachers are protected from unreasonable demands from parents and the community. Collegial Leadership, the third variable refers to the friendliness and supportiveness of the principal. Resource Influence is the fourth variable. It refers to the ability of the principal to influence his superiors and obtain necessary classroom supplies in a timely manner. Finally, Academic Emphasis refers to the expectations of teachers for their students and to the students' willingness to work hard, cooperate, and respect peers who perform well academically.

Other climate instruments view school climate from different perspectives. Halpin and Croft (1963) defined climate along the construct of the openness or closedness of the climate. The instrument developed by Halpin and Croft is the Organizational Climate Descriptive Questionnaire (OCDQ). The OCDQ measures eight dimensions of climate, four describe the faculty, and four describe the interactions between teachers and principal. Open climates are those in which the faculty is committed to the educational mission of the school without need of close supervision. The principal leads by example,

and shows consideration to the staff as well as support. The principal can provide direction when necessary, but avoids the need for too many rules or close supervision. Closed climates are just the opposite. Hoy, Tarter, and Bliss (1990) conducted a study comparing the OHI and the OCDQ in order to determine which was the better predictor of student achievement. They found that the dimensions of the OHI were more strongly related to student performance on the High School Proficiency Test. Although this study was conducted at the high school level rather than at the elementary level, it suggests that the OHI may be a better predictor of student performance than is the OCDQ.

The Learning Climate Inventory (LCI) by Hoyle (1972) also uses the concept of the openness or closedness of the climate. This brief, 20-item inventory divides climate into five variables. The first, leadership, measures the teachers' perceptions of the leadership behavior of the principal. The second, freedom measures the freedom teachers feel to experiment in their classrooms and how much control they feel they have over their instructional program. The third variable, evaluation, measures teacher perception of their own involvement and that of students in the evaluation process of both teachers and administrators. Compliance, the fourth variable, measures teachers' perceptions of the pressure they feel to conform to rules and procedures set forth by their school system. The fifth and final variable, cooperation measures teachers' perceptions of the support they receive when they team-teach or bring in resource people. The reliability coefficients for this instrument were not as high as were those for the OHI, ranging from .50 to .75. Also, due to the age of the instrument, some of the climate variables seemed less appropriate in today's teaching environment.

Another frequently used climate instrument is by Brookover, Beady, Flood, Schweitzer, and Wisenbaker (1979). This climate instrument consists of three separate but interrelated questionnaires, one for principals, one for students, and one for teachers. The dimensions of school climate assessed by the teacher portion of this instrument focus on teacher expectations for students and their belief in the ability of students to be successful. The dimensions measured are expectations that students will attend college, expectations that students will complete high school, teacher and student commitment to improvement, teachers' perceptions of the principal's expectations, and the teachers' sense of academic futility or the sense that there is little chance for academic improvement. The teacher portion of this instrument consists of 47 questions. Brookover and his colleagues found a significant relationship between school climate and student achievement.

The OHI was chosen for this study because of its demonstrated association with student achievement. Hoy and his colleagues conducted several pilot studies of the OHI and the results of those studies were consolidated into a larger developmental study of the elementary version of the survey. After the first pilot containing 65 items, given to a convenience sample of 131 teachers in 131 different schools, a factor analysis was performed. Seven factors were found. They were defined by 40 items. New items were added to reduce ambiguity of certain questions and improve reliability. The new version consisted of 49 items. This new version of the instrument was given to a sample of 598 teachers from 41 elementary schools. Since the desired unit of investigation was the school, individual teacher responses were averaged by school. In the analysis of this

version of the survey, it was found that the seven factors consolidated into six. Of the 49 items, 6 were found to be vague or they did not load strongly onto only one factor. They were eliminated (Hoy, Tarter, & Kottkamp, 1991).

Cronbach's alpha coefficients of reliability were computed for each of the six new factors. All had alpha coefficients of .85 or above. Integrated leadership had the highest alpha coefficient (.95) followed by Morale (.93) and Academic Emphasis (.90). Slightly lower coefficients were found for the final three factors of Resource Support (.89), Institutional Integrity (.87) and Principal Influence (.85) (Hoy, et al., 1991).

In a final field test of the instrument, scores from an additional 37 schools were added to the 41 of the second pilot. This was done to check the factor stability and test-retest reliability of the subtests. This final test also provided a broader sample with more socioeconomic levels and regions represented. In the final analysis using the data from these 78 schools, factor analysis indicated that the original seven factors had collapsed into five and six of the 43 items were deleted because they did not clearly load onto a single factor. The five factors are Teacher Affiliation, Collegial Leadership, Resource Influence, Institutional Integrity, and Academic Emphasis. Teacher Affiliation refers to the sense of commitment teachers feel towards the students and towards the mission of the school. It also refers to the sense of friendliness found between staff members and between students and teachers. Collegial Leadership refers to behavior of the principal. He or she sets high standards yet is friendly, open, and supportive. Resource Influence also refers to an aspect of leadership by the principal. It relates to the ability of the school leader to obtain adequate supplies and instructional materials for his or her school.

Institutional Integrity refers to the ability of a school to stay true to its mission and its educational program. The school and teachers are not vulnerable to unreasonable demands from the outside community or parents. Finally, Academic Emphasis refers to the press for high achievement exhibited by the school. Students meet these expectations through hard work and cooperation (Hoy et al., 1991).

Cronbach's alpha coefficients were calculated for these five factors. According to the developers (Hoy et al., 1991), the factors all had alpha coefficients of .84 and above. They are: Teacher Affiliation (.93), Integrated Leadership (.95), Resource Influence (.89), Institutional Integrity (.89), and Academic Emphasis (.84).

Student achievement.

The student achievement data were drawn from the Virginia Standards of Learning (SOL) Tests for third and fifth grade. The subtests consist of English: Reading, Research and Literature, Mathematics, Science, and Social Sciences. The tests are given each spring, in May or June. They were developed to measure student knowledge of the Standards of Learning developed by the Commonwealth of Virginia. In order to establish content validity, each question was reviewed by educators with experience in the particular content area. Questions were then field tested before becoming a part of the test. Field test items continue to be a part of the test to help ensure a continuous pool of test items. Field test items are not counted as part of the student's score. As further evidence of validity of the instrument, correlations were examined between the SOL tests and the Stanford Achievement Tests, ninth edition (Stanford 9) and the Virginia Literacy Passport Test (LPT) developed by the Virginia Department of Education (1999).

The third grade English: Reading and Writing test had a .76 correlation with the Stanford 9 reading vocabulary and a .78 correlation with the Stanford 9 Total Reading test. The mathematics SOL test had a .67 correlation with the Stanford 9 mathematics Procedures subtest and a 76 correlation with the Stanford 9 Mathematics Problem Solving subtest. There was a .75 correlation between the SOL mathematics test and the Stanford 9 Total Mathematics subtest (Virginia Department of Education, 1999). No data were available regarding correlations between the third grade SOL tests and the LPT since the LPT has never been given in third grade.

Fifth grade SOL English: Reading/Literature and research tests correlated with the Stanford 9 vocabulary subtest at the .76 level. The correlation between that SOL test and the Stanford 9 Reading comprehension subtest was .77, with the Total Reading subtest, it was .78. The correlation between the SOL grade 5 English: Reading/Literature and Research and the Grade 6 LPT Reading test was .64. In mathematics, the correlation between the SOL test and the Stanford 9 mathematics: Procedures subtest was .67. The correlation was .76 with Mathematics: Problem Solving subtest, and .74 with Total Mathematics.

The Department of Education notes that although differences exist between the SOL tests and the Stanford 9, since the Stanford 9 is based on a broader national curriculum, in areas and grade levels where the content was similar, a strong correlation was shown between national percentile ranks on the Stanford 9 and on school pass rates on the SOL tests. Similarly, the Department of Education notes that the LPT is a less rigorous test than the SOL and, therefore SOL performance is lower than the LPT, but

there was a significant positive correlation between school pass rates on the SOL tests and on the LPT. Further, the Virginia Department of Education (1999) noted that the relative standing among schools was similar on the SOL and both the Stanford 9 and the LPT. The Department of Education sought outside experts to review the correlation information "relating the SOL test results to those of the *Stanford 9* and the *Literacy Passport Test*. Outside review confirms the support the correlation information provides to the technical quality of the SOL tests" (Virginia Department of Education, 1999, p. 9).

Reliability for the SOL tests was determined using the Kuder-Richardson Formula #20 (KR-20). This procedure is "a traditional procedure designed to determine the degree to which the test questions consistently measure the same body of content and skills" (Virginia Department of Education, 1999, p. 11). The KR-20 for third grade SOL tests ranged from .84-.91. The English test had a reliability of .90. The mathematics test had a reliability of .91. History and Social Science at the third grade level had a reliability of .84, and Science had a reliability of .85. At the fifth grade level, results were similar. The English: Reading/Literature and Research test had a reliability of .89. The mathematics test reliability was .88. History and Social Science had the lowest reliability score of the four areas with a score of .80. Science had a reliability score of .81. Again, outside experts concurred that the reliability coefficients were "sufficiently high to justify the use of the test scores as one source of evidence concerning the knowledge and skills of individual students on the SOLs" (J. McMillan as quoted in Virginia Department of Education, 1999, p. 11).

Variables in the Study

This dissertation focused on school climate and student achievement. All K-5 teacher responses to the climate survey were aggregated into one overall climate score per school. The scores on each of the five dimensions of climate are reported at the level of the school and together comprise the overall school climate score. Student performance on the SOL tests in third and fifth grade served as the dependent variable. The climate variable was correlated with the SOL test results on a school unit basis.

Independent variables.

The independent variables in this study consist of the total school score and the five teacher climate variables assessed by the Organizational Health Inventory for Elementary Schools (OHI-E) by Hoy and Tarter (1997). The first variable is Teacher Affiliation. This variable refers to a sense of friendliness among the staff and between students and teachers. It also refers to the sense of commitment teachers feel towards their students and to the mission of the school. Highly affiliated teachers bring enthusiasm to their work and feel good about their colleagues and their students. Institutional Integrity is the second variable. It measures the degree to which the educational mission of the school can go forward without undue influence from outside groups. Teachers are protected from unreasonable demands from parents or from the community. Collegial Leadership refers to the perceived behavior of the principal. Schools which score high on this factor have principals who set an open, friendly, and supportive tone, yet hold high expectations for performance of teachers and students. Resource Influence, the fourth variable, describes the ability of the principal to influence

superiors to provide adequate classroom supplies in a timely manner. Extra instructional supplies can also be obtained. The final variable, Academic Emphasis, describes the school's emphasis on achievement. Teachers have high expectations and students meet these high expectations through hard work and cooperation. In schools scoring high on this factor, students who achieve good grades are respected by their peers.

Dependent variables.

The dependent variables in this study are the mean (average) performance score on the Virginia Standards of Learning tests at the third and fifth grade levels. The tests consist of assessments in four areas at both grade levels and include English, mathematics, science, and social sciences.

Data Collection

Organizational climate data were gathered using a mail survey. In January, principals at randomly selected schools were contacted through a letter with a stamped return envelope enclosed. The letter sent to the principals explained the purpose of the research and the procedures (see Appendix A). A random drawing for two cash prizes of $100.00 was conducted from participating schools. The prize was given to the principal to use for the school. This incentive was also explained in the letter.

Those principals agreeing to participate in the survey were sent a packet to distribute to teachers. The packet included survey forms with complete directions. Appendix B contains the instructions that were given to teachers prior to completing the OHI-E. Principals were instructed to have the surveys collected by a staff member one week after giving them to teachers and return them in a postage-paid envelope provided.

As a further incentive for participating, an individual school profile as well as overall findings were sent to principals who requested them upon completion of the survey data analysis. If the principal indicated that it was required by the school system, permission from superintendents or his or her designee was sought according to the procedure of the school system.

Student achievement data for schools participating in the survey were obtained from the Virginia Department of Education for the spring 2005 SOL administration in third and fifth grade. Scaled score data for each subtest were collected for the participating schools.

Socioeconomic status data, collected from the Virginia Department of Education, include an indicator of the socio-economic status of schools as the percentage of students receiving free and reduced price lunches. Free and reduced price lunches are given to children based on household income. Income levels for recipients of this program are set by the federal Government. The percentage of students receiving free or reduced lunch is the measure of socioeconomic status for the schools in this study.

Sampling

A total of 1,061 teachers in 47 schools participated in the climate survey. Schools were self-selected based on the willingness of the principal to have the school participate in the study. The state of Virginia is divided into 8 Superintendent Regions. The number of schools with students in both grades three and five making them appropriate to the study was determined for each region (Virginia School Regions, n.d.). The proportion of the total number of schools represented by each region was calculated. The number of

schools consistent with that proportion was then chosen randomly from each district. District One in central Virginia consists of 151 usable schools with suburban, urban, and rural schools represented. District Two in the eastern part of the state consists of 218 schools, again with suburban, urban, and rural schools represented. Group Three in the Northern Neck area of Virginia consists of 51 mostly rural elementary schools. The one city system in this area had no schools with students in both grade three and grade five. Region Four in Northern Virginia consists of 341 mostly suburban schools with some smaller city systems and a few more rural counties included as well. Region Five has 108 schools, from the Charlottesville area through part of the Shenandoah Valley. Most of these schools are in rural settings, although some small city systems are included in this group. Region Six surrounds the city of Roanoke and consists of 113 mostly rural schools with the city of Roanoke, and two small city systems included as well. Region Seven is in the southwestern corner of the state and consists of 90 mostly rural schools. Region Eight is in the south central portion of the state and consists of 27 rural schools.

Data Analysis

Descriptive statistics (mean, median, and standard deviation) were calculated for all variables using SPSS for Windows. Results of individual teacher climate responses were aggregated to the level of the individual school resulting in an overall climate score for each participating school.

Research questions 1 and 2.

1) Is there a relationship between school climate and third grade student performance on the Virginia Standards of Learning tests? What is the effect of

controlling for SES on the relationship?

Regression analyses were performed to examine the relationship between the school climate scores and SOL scores on the third grade tests in English, mathematics, science, and social studies.

2) Is there a relationship between school climate and fifth grade student performance on the Virginia Standards of Learning tests? What is the effect of controlling for SES on the relationship?

Regression analyses were performed to examine the relationship between the school climate scores and SOL scores on the fifth grade tests in English, mathematics, science, and social studies.

Research question 3.

3) Are any school climate indicators more strongly associated with results on the Standards of Learning tests?

Multiple regression analyses were performed to examine the relationships between student achievement on the third and fifth grade tests in reading, mathematics, science, and social studies and elements of the school climate score (Teacher Affiliation, Collegial Leadership, Resource Influence, Institutional Integrity, and Academic Emphasis).

Delimitations of the Study

The scope of this study was delimited in the following way. The achievement data in the study were restricted to that from third and fifth grade students in Virginia in the spring of 2005. These two grade levels have been tested on the SOL since the tests were

first developed. Although testing at the fourth grade level was added this in 2005 in some areas on an optional basis, those scores were not included since results could be affected by the new use of the test at that grade level. The study was restricted to the elementary level only, and used only public schools from the Commonwealth of Virginia.

Chapter Four

Findings

This study examined the relationship between overall school climate and third and fifth grade student performance on the Virginia Standards of Learning tests. The five climate dimensions addressed by the Organizational Health Inventory for Elementary Schools (OHI-E) (Institutional Integrity, Collegial Leadership, Resource Influence, Teacher Affiliation, and Academic Emphasis) and their relative importance to student achievement on the SOL tests were investigated. The effects of socioeconomic status as reflected by participation in the free-reduced lunch program were also explored.

Results

The research questions were answered by analyzing the data using SPSS 13.0 for Windows. Descriptive statistics were calculated for the percent of students receiving free or reduced price lunches, total school climate, each subscale score, and for student achievement in English, mathematics, science and social studies on the Standards of Learning tests in both third and fifth grades. Table 2 shows these descriptive statistics. To calculate the total school climate score, all teacher responses in each subscale were averaged, giving a mean score for each of the five climate factors (Institutional Integrity, Collegial Leadership, Resource Influence, Teacher Affiliation, and Academic Emphasis). The mean of the combined subscale scores was then calculated. The OHI-E used a four point scale, with one representing seldom occurs, two representing sometimes occurs,

three representing often occurs, and four representing very frequently occurs. Student achievement scores were mean standard scores for all student scores in each school. Standard scores range from 100 to 600. A score of 400 is passing and a score of 500 is considered advanced.

A factor analysis was performed with each school serving as the unit of analysis. Partial support was found for Hoy's five factors on the OHI-E. Failure to find full support for Hoy's five factors may be attributable to the small N (47). A Cronbach's alpha analysis was performed using SPSS to test the internal consistency of the OHI-E and of each subscale. Table 3 shows these results. The range from .86 to .96 demonstrates strong internal consistency on the survey scale.

Outlier analyses were performed on all variables. As a result of these analyses, case 42 was excluded from the calculations for the grade three English variable, and case 42 was excluded from calculations for the grade three mathematics variable. Case 9 was excluded from calculations of the grade 5 social studies variable. These outliers were excluded from all regression analyses.

Table 2

Descriptive Data (N=47)

Variables	Mean	Standard Deviation	Range	Minimum	Maximum
% free/reduced lunch	38.39	16.67	78.47	2.58	81.05
Overall school score	3.06	0.22	0.92	2.53	3.45
Institutional Integrity	2.76	0.33	1.55	1.74	3.29
Collegial Leadership	3.31	0.34	1.48	2.42	3.90
Resource Influence	2.94	0.31	1.48	2.07	3.55
Teacher Affiliation	3.29	0.22	0.91	2.77	3.68
Academic Emphasis	2.70	0.20	0.92	2.22	3.14
Grade 3 math	498.87	23.59	127.20	434.50	561.70
Grade 3 English	446.25	19.99	134.00	392.00	526.00
Grade 3 science	480.75	19.55	111.20	426.60	537.80
Grade 3 social studies	493.15	24.73	132.70	424.90	557.60
Grade 5 math	457.59	22.35	91.40	414.90	506.30
Grade 5 English	457.79	16.91	69.10	427.10	496.20
Grade 5 science	444.36	19.19	80.80	407.00	487.80
Grade 5 social studies	477.78	32.30	172.70	402.30	575.00

Table 3

Organizational Health Inventory for Elementary Schools (OHI-E) Reliabilities

Climate Factor	Number of Items	Reliability
Institutional Integrity	6	0.92
Collegial Leadership	10	0.96
Resource Influence	7	0.94
Teacher Affiliation	9	0.91
Academic Emphasis	5	0.86
OHI-E	37	0.96

Research Question 1

Research question 1: Is there a relationship between school climate and third grade student performance on the SOL tests? What is the effect of controlling for SES on the relationship? Table 4 presents the results of the regression analyses used to answer the first part of this question. There was a significant positive relationship between school climate and student performance in mathematics on the third grade SOL test ($p < .02$), with school climate explaining 14 percent of the variance in student achievement in mathematics.

To answer the second part of this question, another regression analysis for each SOL test was performed, with the percentage of free and reduced price lunch recipients entered first and total school score entered second. The percentage of students on free and reduced price lunch served as the indicator for SES level. Socioeconomic level is

inversely related to the proportion of students receiving free or reduced price lunches. When the percentage of students receiving free and reduced price lunches was entered into the regression first, school climate continued to show a significant relationship with SOL scores in mathematics ($p < .01$). Percent of students on free/reduced price lunch was not significantly correlated with third grade mathematics scores. Overall school score explained ten percent of the variance. In science and social studies, the percent of students receiving free/reduced price lunches was significantly negatively related to student scores on the SOL tests ($p < .01$) and explained 13 and 14 percent of the variance respectively. English scores also showed a significant negative relationship with percent of students receiving free/reduced price lunches, but not as strong ($p < .05$) with 10 percent of the variance explained. Table 5 shows these results.

Table 4

Regression Analysis of Third Grade SOL Scores and Total School Climate

SOL test	R	R^2	F
English	.12	.01	.65
Mathematics	.37	.14	6.87*
Science	.07	.00	.19
Social Studies	.11	.01	.59

*$p < .02$

Table 5

Regression Analysis of Third Grade SOL Scores and Total School Climate Controlling for SES

SOL Test	*R*	Change in *R*	R^2	F
English		None		
% free/reduced	.32		.10	4.86*
Overall school score	.32		.10	2.5
Mathematics		.15		
% free/reduced	.28		.08	3.74
Overall school score	.43		.18	4.84**
Science		None		
% free/reduced	.37		.14	7.24**
Overall school score	.37		.14	3.6*
Social studies		.01		
% free/reduced	.36		.13	6.62**
Overall school score	.37		.13	3.39*

* $p < .05$ ** $p < .01$

Research Question 2

Research question 2: Is there a relationship between school climate and fifth grade student performance on the SOL tests? What is the effect of controlling for SES on the relationship? Table 6 presents the results of the regression analyses used to answer the first part of this question. There was a significant positive relationship between school

climate and student performance on the fifth grade social studies SOL test ($p < .05$). School climate explained 13 percent of the variance in SOL scores in social studies.

Table 6

Regression Analysis of Fifth Grade SOL Scores and Total School Climate

SOL Test	*R*	R^2	F
English	.21	.04	2.02
Mathematics	.17	.03	1.27
Science	.13	.02	0.74
Social Studies	.35	.13	6.27*

*$p < .05$

To answer the second part of this question, another regression analysis for each SOL test was performed, with the percentage of free and reduced price lunch recipients entered first and total school score entered second. Table 7 shows these results. There was a moderate negative relationship between the percent of students receiving free/reduced price lunches and English SOL scores ($p < .01$), with 28% of the variance in student scores explained. When the percentage of students receiving free/reduced price lunch was entered into the regression analysis first, school climate continued to show a significant relationship to English SOL scores ($p < .01$) and explained an additional 2% of the variance. There was a negative correlation between science scores on the SOL test and the percent of students receiving free/reduced price lunches ($p < .01$). The percent of students receiving free/reduced price lunches explained 16% of the variance in science scores. Fifth grade science scores and school climate were associated at the .05 level

when the percentage of students receiving free/reduced price lunch was entered into the regression analysis first. There was a significant negative association between the percentage of students receiving free/reduced price lunch and social studies SOL scores and a significant positive association between school climate and the social studies SOL test scores in fifth grade (both $p < .01$). The percentage of students receiving free/reduced price lunch explained 18% of the variance in student scores on the fifth grade social studies test, with school climate explaining an additional 8%.

Research Question 3

Research question three: Are any school climate indicators more strongly associated with results on the Standards of Learning tests? Multiple regression analyses were performed to examine the relationship between the elements of the school climate score (Institutional Integrity, Collegial Leadership, Resource Influence, Teacher Affiliation, and Academic Influence) and SOL test scores. A stepwise model was used. Table 8 shows the results of these analyses with the third grade tests. Both English and mathematics scores in third grade were positively associated with Academic Emphasis ($p < .05$). On the mathematics test, Academic Emphasis explained 16% of the variance in the scores. On the English test, Academic Emphasis explained 10% of the variance and Institutional Integrity ($p < .05$) was negatively correlated with SOL scores on the English test and explained an additional 4% of the variance in scores.

Table 7

Regression Analysis of Fifth Grade SOL Scores and Total School Climate Controlling for SES

SOL Test	*R*	Change in *R*	R^2	F
English		.02		
% free reduced	.53		.28	17.66**
Overall school score	.55		.30	9.57**
Mathematics		.05		
% free/reduced	.20		.04	1.87
Overall school score	.25		.06	1.41
Science		.01		
% free/reduced	.40		.16	8.39**
Overall school score	.41		.16	4.31*
Social Studies		.09		
% free/reduced	.42		.18	9.32**
Overall school score	.51		.26	7.71**

*p <.05 **p <.01

Table 8

Regression Analyses of Third Grade SOL Tests and Aspects of Climate

SOL test	*R*	R^2	F
English			
1. Academic Emphasis	.32	.10	5.08*
2. Institutional Integrity	.43	.18	4.76*
Mathematics			
1. Academic Emphasis	.41	.16	8.62*
Science			
None			
Social Studies			
None			

* $p < .05$

Table 9 shows the results with the fifth grade tests. There was a significant positive relationship between Academic Emphasis and fifth grade SOL scores on the English, science, and social studies tests ($p < .01$). Academic Emphasis explained 18% of the variance in scores in science, 26% of the variance in social studies, and 24% in English. Additionally, there was a significant negative correlation between Institutional Integrity and fifth grade English scores ($p < .01$) with Institutional Integrity explaining an additional 6% of the variance.

Table 9

Regression Analyses of Fifth Grade SOL Tests and Aspects of Climate

SOL Test	R	R^2	F
English			
1. Academic Emphasis	.49	.24	13.95**
2. Institutional Integrity	.55	.30	9.49**
Mathematics			
None			
Science			
1. Academic Emphasis	.42	.18	9.81**
Social Studies			
1. Academic Emphasis	.51	.26	15.03**

**$p<.01$

Additional Results

Finally, regression analyses were performed to examine the relationship between Academic Emphasis and SOL scores. Table 10 shows the results at the third grade level and Table 11 shows the results with fifth grade SOL scores. On the third grade tests, there was a positive correlation between Academic Emphasis and student scores in mathematics ($p < .01$), with Academic Emphasis explaining 18% of the variance in scores. There was also a positive correlation between Academic Emphasis and English scores in third grade ($p < .05$), with 10% of the variance explained. On the fifth grade tests, there was a moderate positive association between Academic Emphasis and scores

on the social studies test ($p < .001$) with 28% of the variance explained. English and science scores also showed a positive correlation with Academic Emphasis ($p < .01$). Twenty-four percent of the variance in English scores and 18% of the variance in science scores was explained by Academic Emphasis.

Table 12 shows a correlation matrix of all the variables. The top part of the table shows the third grade SOL scores, the bottom, the fifth grade scores. This matrix facilitates comparisons between grade level results.

Table 10

Regression Analysis of Third Grade SOL Scores and Academic Emphasis

SOL test	R	R^2	F
English	.32	.10	5.08*
Mathematics	.43	.18	10.08**
Science	.27	.07	3.40
Social Studies	.22	.05	2.38

*$p < .05$ **$p < .01$

Table 11

Regression Analysis of Fifth Grade SOL Scores and Academic Emphasis

SOL test	*R*	R^2	F
English	.49	.24	13.95**
Mathematics	.24	.06	2.70
Science	.42	.18	9.81**
Social Studies	.53	.28	17.86***

**$p < .01$ ***$p < .001$

Table 12

Correlation Matrix of School Climate Factors and SOL Scores

	1.	2.	3.	4.	5.	6.	7.	8.	9	10.	11.
			Third grade								
1. Overall school score		-.12	.57**	.89**	.84**	.77**	.52**	.12	.28	.07	.11
2. % free/reduced	-12		.38**	-.08	-.24	-.19	-.46**	-.24	-.37*	-.37*	-.36*
3. Institutional integrity	.57**	.38**		.40**	.29	.30*	.07	-.20	-.10	-.18	-.21
4. Collegial leadership	.89**	-.08	.40**		.73**	.60**	.28	.09	.23	.05	.15
5. Resource influence	.84**	-.24	.29	.73**		.51**	.44**	.24	.37*	.19	.25
6. Teacher affiliation	.77**	-.19	.30*	.60**	.51**		.54**	.17	.22	.04	.04
7. Academic emphasis	.52**	-46**	.07	.28	.44**	.54**		.22	.43**	.27	.22
8. English SOL	.21	-.53**	-.22	.14	.26	.32*	.49**		.34	.48**	.55**
9. Mathematics SOL	.17	-.20	-.08	.18	.15	.21	.24	.67**		.66**	.58**
10. Science SOL	.13	-.40**	-.16	.09	.14	.20	.42**	.79**	.77**		.83**
11. Social Studies SOL	.35*	-.26	.11	.24	.28	.32*	.53**	.43**	.43**	.50**	
					Fifth Grade						

**p<.01 *p<.05

Chapter Five

Conclusions and Recommendations

Student performance on state standardized tests has become increasingly important since the passage of the No Child Left Behind Act (P.L. 107-110). These tests have become the means of documenting the performance of schools. Schools that do not demonstrate improvement on state standardized tests face sanctions. Educators are examining ways to increase student performance on these critical tests. One area that has been linked with student achievement is school climate (Bulach, Malone, & Castleman, 1995; B. Johnson, 1998; P. Johnson, 1998; Linzy, 2000; Waller, 1990; Walton, 1990).

This study examined the correlation between overall school climate and third and fifth grade student performance on the Virginia Standards of Learning tests. The effect of socioeconomic status as measured by student participation in the free/reduced price lunch program on these correlations was studied. The relative importance of the subscale measures of climate (Institutional Integrity, Collegial Leadership, Resource Influence, Teacher Affiliation, and Academic Emphasis) as they related to student performance was also studied.

Limitations

Schools participating in the climate survey in this study were self-selected. Only schools and districts willing to participate took part in the research. That affects the external validity of the study, since the findings cannot be generalized to every

elementary school in the Commonwealth of Virginia.

School climate data were collected through a mail survey of teachers. Participation was voluntary. Schools with less than 50% of the staff responding were eliminated from the study. The number of participating schools (47) also limited the study. An anecdotal comment made by one principal who declined to participate indicated that his staff had already responded to too many climate surveys and he was not going to give them another one. If other principals felt this way as well, this could help explain one reason for the low N. While the number of participants was sufficient to perform the analyses, with a small sample there is the risk of finding significant relationships that are not meaningful. In addition, some of the regressions performed used five subscales for the independent (climate) variables. When doing this type of analysis, it is best to have 10 subjects per variable. With an N of only 47, this study did not achieve this. Because some of the subscales are closely related, the problem of colinearity across the five subscales must be considered as well. Furthermore, in this study, while the overall climate did account for some of the variance in SOL scores, the Partial Eta squared statistic was quite small (.000 to .013). The observed power was also low (.050 to .095). These limitations must be kept in mind during the discussion of the findings and the recommendations.

Discussion of Findings

The total school climate score was found to be significantly related to third grade student achievement on the mathematics SOL tests and to fifth grade social studies scores on the SOL tests. The correlations were positive, but not strong. This finding is consistent

with those found in other studies of school climate and elementary student achievement (Bulach, Malone, & Castleman, 1995; B. Johnson, 1998; P. Johnson, 1998; Waller, 1990; Walton, 1990). Each of these studies used different climate assessment instruments. Also, in all of these studies except that of B. Johnson, student achievement data consisted of a composite, overall score of both mathematics and reading. For his achievement variables, B. Johnson used test scores in reading/language arts, mathematics, science, and social studies. The achievement tests in his study were given to fourth grade students. He reported significant positive correlations between school climate scores and all achievement subtests.

The second part of research questions one and two asked what the effect of controlling for socioeconomic status was. On the third grade mathematics test, overall school climate continued to show a significant relationship to test scores ($p < .01$). The percent of students receiving free and reduced price lunches explained eight percent of the variance in scores, with school climate explaining an additional ten percent. On the fifth grade tests, school climate continued to show a correlation to social studies scores at the .01 level. The percentage of students receiving free and reduced price lunches explained 18% of the variance and overall school climate explained an additional 8 percent. Additionally, fifth grade English and science tests showed a significant negative correlation with the percent of students receiving free and reduced price lunches ($p < .01$) with the percentage of students receiving free and reduced price lunches explaining 28% of the variance in scores in English and 16% of the variance in science.

Again, this is consistent with the findings of other studies that found a significant correlation between student achievement and SES level (Bulach, et al., 1995; Corallo & McDonald, 2001; Hoy, Hannum, & Tschannen-Moran, 1998; Hoy, Tarter, & Bliss, 1990; Parish, 2002; Waller, 1990). Unlike these other studies, this study found no significant relationship between student performance on mathematics tests in either third or fifth grade and percent of students receiving free/reduced price lunch. Mathematics at the elementary level is more concrete than is any other subject. Further, schools can closely align the mathematics curriculum with the SOL tests. These factors might serve to reduce the impact of SES on performance on the mathematics tests. It is interesting to note that the mean scores in mathematics dropped about 41 points from third grade to fifth grade. As students progress through the grade levels, the skills in mathematics progress into higher level thinking skills. It would be interesting to investigate whether SES would begin to show an association with mathematics skills at higher grade levels.

The third research question explored the elements of the overall climate score and which indicators were more strongly associated with student performance on the SOL tests. When the subscale scores (Institutional Integrity, Collegial Leadership, Resource Influence, Teacher Affiliation, and Academic Emphasis) were entered into a stepwise regression model, only Academic Emphasis and Institutional Integrity showed a significant correlation with student performance. Academic Emphasis was significantly positively related to third grade performance in both English and mathematics at the $p <$ .05 level. Institutional Integrity explained an additional 4% of the variance in English. Academic Emphasis was related to performance on the fifth grade English, science and

social studies tests. Institutional Integrity explained an additional 6% of the variance in fifth grade English scores on the SOL tests. Other studies have also found an association between academic emphasis and student achievement (Goddard, Sweetland, & Hoy, 2000; Parish, 2002; Taylor, Pearson, Clark, & Walpole, 2000).

When Academic Emphasis was entered by itself in regression analyses to examine its relationship to SOL scores, it showed a significant positive relationship to third grade English and mathematics scores. The correlation to mathematics scores was significant at the $p < .01$ level with 18% of the variance in scores explained. The third grade English test showed a correlation with Academic Emphasis at the $p < .05$ level, with 10% of the variance explained. The relationship between Academic Emphasis and third grade science scores approached significance at the .07 level. The R was .27, R^2 was .07 and the F statistic was 3.40.

On the fifth grade SOL tests, Academic Emphasis was positively correlated to all but the mathematics test at the $p < .01$ level ($p < .001$ for social studies). It explained 28% of the variance in scores on the social studies test, 24% of the variance on the English test, and 18% on the science test. It was interesting to note that the strongest correlation between Academic Emphasis and student scores on SOL tests was in mathematics in third grade. In fifth grade, however, mathematics was the only SOL test that showed no correlation with Academic Emphasis. The reason for this is unclear. Perhaps at the time children begin to acquire basic skills in mathematics, Academic Emphasis is important to that learning. The primary grades are the crucial time for acquiring the basic mathematics skills that students build upon in later grades. As they

build on those skills, it may be that Academic Emphasis loses its importance as other factors become more important to student success.

Conclusions and Implications

As statewide assessments of student performance continue to have implications for both students and schools, educators continue to look for ways to improve those scores. The fact that there was a relationship between school climate and student performance on some of the SOL tests is a reason to continue to examine school climate in greater depth.

The school climate variable Academic Emphasis was significantly associated with more SOL subtests than was the overall school climate score. This finding was consistent with other research which also found a positive correlation between this variable and student performance (Goddard, Sweetland, & Hoy, 2000; Parish, 2002; Taylor, Pearson, Clark, & Walpole, 2000). These findings suggest that an emphasis on student achievement may be a good place for schools to start when trying to build more positive climates in hopes of raising achievement. While other climate factors are important and probably have an indirect effect on student success, increasing academic emphasis could have the greatest impact.

The Academic Emphasis subscale measured the perception of teachers concerning how seriously students take their schoolwork. Do teachers believe students are cooperative, try hard to do well, and take their work seriously? Five items on the OHI-E measured this variable. The findings of this study support those of Goddard, Sweetland, and Hoy (2000). The authors expanded the Academic Emphasis subscale of the OHI-E to

eight items to reflect the behavior of teachers as well as that of students. They found a positive relationship between Academic Emphasis and student achievement in math and reading on the Metropolitan Achievement Test.

The research of Goddard and his colleagues (2000) was based upon earlier effective schools research and research at the high school level (Hoy & Tarter, 1997; Hoy, Tarter, & Kottkamp, 1991). The authors' assumption is that schools in which teachers believe that students can achieve and students value and respect academic accomplishments of others foster academic achievement in their students.

This dissertation also found a negative relationship between the number of students receiving free and reduced price lunches and student performance on the SOL tests in all areas except mathematics in both third and fifth grade. This relationship has been found in other studies (Bulach, Malone, & Castleman, 1995; Goddard, Sweetland, & Hoy, 2000; Hoy, Tarter, & Bliss, 1990; Parish, 2002). It differed from these other studies in the lack of relationship between mathematics scores and the measure of socioeconomic status. A relationship between Academic Emphasis and mathematics scores in fifth grade was also not found, although there was one in third grade.

The SOL tests are very specific regarding what is tested and the weight given to each area. It may be that because of the specific and concrete nature of the mathematics tests, both SES level and the Academic Emphasis in the school may be less important than in other academic areas. Often a student's prior knowledge and support at home may also play a part in the success of the student in academic areas such as reading or social studies. The importance of socioeconomic level to student achievement cannot be

ignored, however, it is a factor over which schools have little control. Educators can change the climate of their schools, emphasizing areas correlated with student achievement, such as Academic Emphasis. Positive changes in school climates may well lead to positive changes in student performance on tests that have become increasingly important to the students themselves and to their schools.

Although it did not show a correlation with as many academic areas as Academic Emphasis, the negative nature of the relationship between Institutional Integrity and the English SOL tests in both third and fifth grade is worth noting. The fact that the relationship is negative shows that when teachers perceive that the school is vulnerable to outside interference, even that which teachers consider unreasonable, English scores tend to be higher. The relationship, however, is not strong, and explains only 4-6% of the variance in scores.

Parish (2002) found a positive correlation between a similar variable termed "Community Engagement" and English SOL scores at the middle school level. The Community Engagement variable was developed from a variable called "environmental press." Environmental press was made up of questions like those which constitute the Institutional Integrity variable of the OHI-E. The questions have to do with whether teachers feel pressure from the community or whether they see a few vocal parents changing school board policy. The community engagement variable looked at involvement from the community in a more positive manner than did environmental press or Institutional Integrity. Instead of asking whether schools were vulnerable to outside pressure, it asked if schools were responsive to needs of the community and whether the

community was supportive of the school. Community involvement, whether sought by the schools or viewed as interference, could improve English scores.

Based on the findings in this dissertation and in the study by Parish, principals may want to consider finding more ways in which to involve community members in the school. Recruitment of community volunteers to read with children in the school, parent workshops on the importance of reading at home, along with strategies for parents to use when reading with their children could help foster positive community involvement. It would be helpful to pursue future research to determine if the positive correlation found between community involvement and English scores is indicative of a causative link.

Increasing the Academic Emphasis of the school may also have an effect on test scores. Administrators could demonstrate that they value students who work hard and strive for success by instituting recognition programs or incorporating time for students to share successes with them. The message that the school takes learning seriously and rewards success must be communicated by administrators. Classroom rewards and recognition as well as school-wide incentives could help boost the level of Academic Emphasis in schools. Teachers may need additional training in student motivation. Teachers should be encouraged to find ways to encourage students to be responsible for their learning. To do this, schools should provide opportunities for students to seek extra help and let students and parents know about them. Teachers and administrators should not only push students to do their best, but provide support necessary for them to do so.

Student performance on standardized tests has become increasingly important to both students and schools. Many studies have demonstrated an association between

school climate and student performance (Bulach, Malone, & Castleman, 1995; B. Johnson, 1998; P. Johnson, 1998; Waller, 1990; Walton, 1990). Superintendents should consider doing periodic climate surveys to assess the climates of the schools in their division. The findings from these instruments can guide school leaders in building on the strengths in their schools as well as finding areas of concern to address. Because of the association between Academic Emphasis found in this and other studies, school leaders should consider using an instrument such as the OHI that measures this variable.

Suggestions for Future Research

Further research regarding school climate and its relationship to student achievement should be done in order to better understand both the relationship and the concept of school climate itself. The number of schools participating in the study (47) and the fact that they were self-selected limited this study. The results of this study cannot be generalized to all elementary schools in the Commonwealth of Virginia or to elementary schools in other states. It would be beneficial to replicate this study with a larger, random sample within the Commonwealth of Virginia or in other states where students take statewide tests to assess their knowledge of their state's standards. Although these studies could be done at the elementary, middle, or high school level, it would be especially helpful to do the research at the elementary level, since that level is the one with fewer climate studies.

The independent effect of Academic Emphasis on student achievement is also an area that could lead to further research. The concept of Academic Emphasis could be expanded upon and more precise and comprehensive survey instruments could be

created. If this part of the school climate continues to show strong association with student performance, it needs to be further explored and understood.

Student performance on the SOL tests is important. The results of these tests can affect the schools in terms of accreditation and ultimately the students themselves. High school graduation seems a long way off for elementary students, but the skills and habits learned at this level will affect their secondary school career. The SOL tests, however, are not the sole measure of the effectiveness of the school. The level of commitment and caring of the teachers, the inclusion of families and community into the school, and the leadership of the principal all affect and are affected by different aspects of the school climate. It should be the goal of schools to create vital, nurturing environments where students can feel safe, happy, and encouraged to be the best that they can be. Further research into all aspects of climate and their relationship to different areas of school effectiveness could be helpful. As the effects of organizational climate become better understood by educators, they can continue to focus on improving the aspects of climate which can be of the greatest benefit to their students.

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Appendix A

Letter to Principals

January 28, 2005

Dear Principal,

I am an elementary counselor in Chesterfield County Schools and a doctoral candidate at Virginia Commonwealth University currently doing research on my dissertation related to school climate and student achievement on the SOL tests. With the pressure on schools to continuously improve, it becomes ever more critical to find as many ways possible to boost student achievement. I hope my research will give schools one more tool with which to do that.

Your school was one of 200 randomly selected from schools across the Commonwealth for participation in this study. I hope you will agree to allow your teachers to complete a short (5 minute) survey. Upon receipt of your agreement to participate, I will send you a packet with teacher survey forms and instructions. No school or teacher will be mentioned by name in the dissertation. However, if you wish, I will send you a climate profile of your school upon completion of my research. This profile will provide you with information on areas of strength and weakness regarding the health of the climate of your school, and can provide you with data to make changes which can positively impact student performance.

As a further incentive, I will send two schools drawn randomly from respondents $100.00 to invest in meeting a need at their schools. I hope I can count on you for your assistance with this research. I am enclosing a stamped, self addressed envelope for your reply. If you have any questions, you may contact me at thomassonvl@vcu.edu. This research has been approved by the Virginia Commonwealth University Institutional Review Board. The survey Instrument has strong technical quality. A copy is enclosed for your review. I am very grateful for your time and assistance.

Sincerely,

Victoria Thomasson

_____Yes, I will have my teachers participate.

I have _____teachers on staff.

_____Please send a school climate profile of my school upon completion of the research.

_____No, I will not have my teachers participate.

Appendix B

Letter to Teachers

February, 2005

Dear Teacher,

I am a school counselor in Chesterfield County and a doctoral candidate at Virginia Commonwealth University. Your principal has agreed to allow me to send you this survey. My research is on the association between school climate and student achievement on the SOL tests. It is my hope that this research will provide another way to improve student performance on these important tests.

I know your time is limited, so I chose a survey instrument that should take no more than 5-10 minutes to complete. Your participation is voluntary. You may skip any questions and stop at any time. Please do not sign your name on the survey. You will notice that there are no questions relating to the subject or grade level you teach. That is to help insure your anonymity. Once you have completed the survey, please return it to the person your principal has designated to collect it. He or she will place it in an envelope to be returned to me. No teacher, school, or county will be identified in my dissertation. An overall school climate profile of your school will be made available to your principal should (s)he wish it, but again, no individual teacher responses will be discussed, only the average scores.

Once again, thank you for your time. Answer the questions as you perceive them.

Sincerely,

Victoria L. Thomasson

Appendix C

Permission

Organizational Health Inventory for Elementary Schools

We encourage all interested researchers and practitioners to use any of the instruments in this book. There is no fee; simply reproduce the instrument and use it in your research or organizational development. We ask only that you share your results with us so that we can refine the measures, development more comprehensive norms, and add to the body of knowledge about school climate. Address all correspondence to Professor Wayne K. Hoy, Graduate School of Education, Rutgers University, New Brunswick, New Jersey 08903.

June 26, 1990
W. K. Hoy
C. J. Tarter
R. B. Kottkamp

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OHI-E

DIRECTIONS: THE FOLLOWING ARE STATEMENTS ABOUT YOUR SCHOOL. PLEASE INDICATE THE EXTENT TO WHICH EACH STATEMENT CHARACTERIZES YOUR SCHOOL BY CIRCLING THE APPROPRIATE RESPONSE.

R0=RARELY OCCURS SO=SOMETIMES OCCURS O=OFTEN OCCURS V=VERY FREQUENTLY OCCURS

1. The principal explores all sides of topics and admits that other opinions exist...	RO	SO	O	VFO
2. The principal gets what he or she asks for from superiors.....	RO	SO	O	VFO
3. The principal discusses classroom issues with teachers.....	RO	SO	O	VFO
4. The principal accepts questions without appearing to snub or quash the teacher..	RO	SO	O	VFO
5. Extra materials are available if requested.....	RO	SO	O	VFO
6. Students neglect to complete homework.....	RO	SO	O	VFO
7. Students are cooperative during classroom instruction.....	RO	SO	O	VFO
8. The school is vulnerable to outside pressures.....	RO	SO	O	VFO
9. The principal is able to influence the actions of his or her superiors.....	RO	SO	O	VFO
10. The principal treats all faculty members as his or her equal.....	RO	SO	O	VFO
11. The principal goes out of his or her way to show appreciation to teachers.....	RO	SO	O	VFO
12. Teachers are provided with adequate materials for their classrooms.....	RO	SO	O	VFO
13. Teachers in this school like each other.....	RO	SO	O	VFO
14. Community demands are accepted even when they are not consistent with the educational program.....	RO	SO	O	VFO
15. The principal lets faculty know what is expected of them.....	RO	SO	O	VFO
16. Teachers receive necessary classroom supplies.....	RO	SO	O	VFO
17. The principal conducts meaningful evaluations.....	RO	SO	O	VFO
18. Students respect others who get good grades.....	RO	SO	O	VFO
19. Teachers feel pressure from the community.....	RO	SO	O	VFO
20. The principal's recommendations are given serious consideration by his or her superiors.....	RO	SO	O	VFO
21. The principal maintains definite standards of performance.....	RO	SO	O	VFO
22. Supplementary materials are available for classroom use.....	RO	SO	O	VFO
23. Teachers exhibit friendliness to each other.....	RO	SO	O	VFO

24. Students seek extra work so they can get good grades	RO	SO	O	VFO
25. Select citizen groups are influential with the board	RO	SO	O	VFO
26. The principal looks out for the personal welfare of faculty members	RO	SO	O	VFO
27. Teachers express pride in their school	RO	SO	O	VFO
28. Teachers identify with the school	RO	SO	O	VFO
29. The school is open to the whims of the public	RO	SO	O	VFO
30. A few vocal parents can change school policy	RO	SO	O	VFO
31. Students try hard to improve on previous work	RO	SO	O	VFO
32. Teachers accomplish their jobs with enthusiasm	RO	SO	O	VFO
33. The learning environment is orderly and serious	RO	SO	O	VFO
34. The principal is friendly and approachable	RO	SO	O	VFO
35. There is a feeling of trust and confidence among the staff	RO	SO	O	VFO
36. Teachers show commitment to their students	RO	SO	O	VFO
37. Teachers are indifferent to each other	RO	SO	O	VFO

Note. From *Open Schools/Healthy Schools* (pp. 165-166) by W. K. Hoy, C. J. Tarter, and R. B. Kottkamp, 1991.Thousand Oaks, CA: Sage. Copyright 1991 by Sage Publications. Permission to use the forms for educational purposes granted.

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Vita

Victoria Lee Thomasson was born on May 24, 1958, in Washington, D.C., and is an American citizen. She graduated from Annandale High School in Annandale, Virginia in 1976. She received her Bachelor of Music degree from James Madison University and taught elementary music and band in Northampton County, Virginia for eight years. She moved to Richmond, Virginia in 1988 and received her Master of Education degree in counselor education from Virginia Commonwealth University in 1992. She has been working as an elementary school counselor for Chesterfield County Schools in Chesterfield, Virginia since January, 1993.